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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,463	10/30/2003	Ming-Tien Lin	HANP0022USA	6011
27765 7590 07/16/2007 NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			EXAMINER RUDE, TIMOTHY L	
			ART UNIT 2871	PAPER NUMBER
			NOTIFICATION DATE 07/16/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

winstonhsu.uspto@gmail.com
Patent.admin.uspto.Rcv@naipo.com
mis.ap.uspto@naipo.com.tw

Office Action Summary

Application No.

10/696,463

Applicant(s)

LIN ET AL.

Examiner

Timothy L. Rude

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 29-31 is/are pending in the application.
- 4a) Of the above claim(s) 30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 29 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claims and Claim Objections

Claim 1 is amended. Claims 29-31 are added.

Please note, the claims listing is improper in that it shows changes relative the 08 November 2006 claims listing that was not entered. A proper claims listing should show all amendments made subsequent to the 30 May 2006 claims listing. Rather than consider Applicant again non-responsive, examiner will consider all amendments relative the 30 May 2006 claims listing. Please ensure accurate claims listings.

Claim 1 is objected to because of the following informalities:

Newly added limitations as to "... overlaps across the source electrode of the thin film transistor of the adjacent pixel area." is considered misleading. Please reference Applicant's Figure 3E of the elected invention. 42A overlaps the extension portion of data line 34a that runs from 34a to the source of the TFT, 38b, at S. This is considered to be NOT the adjacent pixel area to the left of 34a at 42B and NOT above 32b.

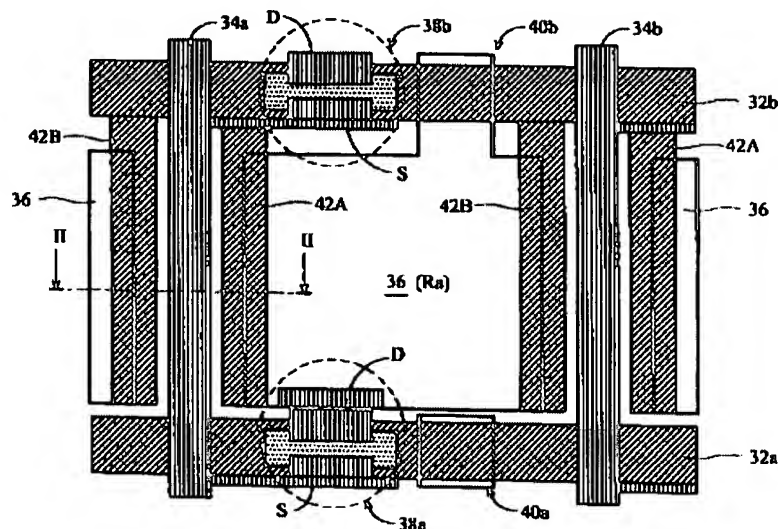


FIG. 3E

Also, the first shielding layer does not overlap any source electrode.

For examination purposes, "of the adjacent pixel area" will be considered to limit to - - any area adjacent the central portion of the pixel area - -. In other words, the peripheral area surrounded by 34a, 34b, 32a, and 32b.

Also, for examination purposes the shielding layer will be considered to overlap the extension portion connecting 34a to the source electrode at S, per Applicant's elected species, Figure 3E.

Examiner understands what Applicant apparently wants to claim regarding 38b driving an adjacent sub-pixel, but the present claim limitations are still way too broad and misleading.

Newly added claim 31 limits to a light shield that overlaps the extension portion of connected to the TFT that is in turn connected to the pixel electrode as opposed to the

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extension portion connected to the TFT that is in turn connected to the adjacent pixel electrode. Also, limitations drawn to "or the second data line comprising an extension" and "positioned on the first ... gate line" are drawn to alternate, non-elected, species contrary to elected species shown in Figure 3E. Rather than find Applicant again non-responsive, examiner has examined the elected species in anticipation of removal of limitations drawn to non-elected species [MPEP 706.07a].

Appropriate corrections are required.

Election/Restrictions

Newly submitted claim 30 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Applicant has received an office action on the merits of the species shown in Figure 3E, elected without traverse in the paper filed 08 April 2005.

The limitations as to a smaller spacing of one shielding layer vs another is a structurally mutually exclusive species to the elected species shown in Figure 3E.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 30 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1-4, 29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (APA) in view of Okada et al., (Okada), USPAT 6,633,360.

As to claims 1, 29, and 31, APA discloses a liquid crystal display (LCD) device (fig. 1 b, ref. 10) including a plurality of pixel areas, each pixel area comprising a pixels area (fig. 1b, ref. Ra) defined by a first transverse-extending gate line (fig. 1b, ref. 12a), a second transverse-extending gate line (fig. 1b, ref. 12b), a first lengthwise-extending data line (fig. 1b, ref. 14a), and a second lengthwise-extending data line (fig. 1 b, ref. 14b), a pixel electrode formed overlying the pixel area (fig. 1 b, ref. 16), a switching element (fig. 1b, ref. 18b; pg. 2, lines 7-8) electrically connected to the pixel electrode; a thin film transistor positioned on one of the first or the second transverse-extending gate lines, comprising a source electrode [and a drain electrode; and a first shielding layer (fig. 1b, ref. 22a) that is parallel to the first data line, overlaps a the periphery of the pixel electrode, and is adjacent to the first data line. However, the reference fails to specifically disclose that the first light shielding layer is directly connected to the first gate line and overlaps extension of 34a connected to source electrode of a second TFT connected to the adjacent pixel electrode at S, per Figure 3E.

Okada discloses an active matrix type liquid crystal display apparatus wherein a light-shielding layer is directly connected to the gate line. He also discloses that such a structure is advantageous since it suppresses shadowing phenomenon due to differences capacitances and thus prevent "block separation" (col. 7, lines 13-24).

Quote from Okada at col. 7, lines 13-24: "... the light shield film is electrically connected to either the auxiliary capacitor line or the scanning line. In this case, owing to the field shield effect of the light shield film, a part of a line of electric force emitted from the signal line terminates at the auxiliary capacitor line or the scanning line. Thus, a first capacitance between the pixel electrode and one of the two adjacent signal lines and a second capacitance between the pixel electrode and the other adjacent signal line are reduced. As a result, the shadowing phenomenon due to the difference between the first and second capacitances is further suppressed, and the "block separation" is well prevented from occurrence."

Okada is evidence that ordinary workers in the art would find a reason, suggestion or motivation to directly connect the first gate line and the first light-shielding layer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the display device of the APA by directly connecting the first light-shielding film with the first gate line to prevent block separation, as per the teachings of Okada [this would result in overlapping the extension portion of the data line near the switching element or TFT as in Figure 3E].

As per claim 2, APA discloses the LCD device as recited above where the first shielding layer (fig. 1 b, ref. 22a) overlaps the periphery of the pixel electrode (fig. 1b, ref. 16) to provide a first overlapping portion.

Regarding claims 3-4, APA discloses the LCD device as recited above having a second shielding layer (fig. 1b, ref. 22b) parallel to the second data line (fig. 1b, ref. 14b) and adjacent to the second data line that is not electrically connected to the first gate line.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Okada and further in view of Watanabe et al., (Watanabe), USPAT 5,859,677.

APA discloses the LCD device as recited above.

However, when modified by Okada fails to specifically disclose that the space between the first data line and the periphery of the pixel electrode is a liquid crystal reverse region and the spacing between the second data line and the periphery of the pixel electrode is a liquid crystal non-reverse region.

Watanabe discloses an LCD where the space between the first data line and the periphery of the pixel electrode is a liquid crystal reverse region and the spacing between the second data line and the periphery of the pixel electrode is a liquid crystal non-reverse region (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the space between the first data line and the periphery of the pixel electrode being in a liquid crystal reverse region and the spacing between the second data line and the periphery of the pixel electrode is a liquid crystal

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non-reverse region since one would be motivated to provide potential stability (col. 7, lines 11-20), which serves to suppress liquid crystal disclination that becomes a cause for coarse image appearance and residual image (col. 3, lines 29-34). Ultimately, this serves to provide a display with enhanced display quality without residual images (col. 3, line 34; abstract).

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Okada and Watanabe and in further view of Song (US. Patent No. 6,788,356).

As to claim 6, APA, when modified by Okada and Watanabe, discloses the LCD device as recited above.

However, the reference fails to specifically disclose the width of the first light shielding layer being larger than the width of the second shielding layer.

Song discloses an LCD where the width of the first light shielding layer is larger than the width of the second shielding layer (col. 5, lines 25-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the width of the first light shielding layer is larger than the width of the second shielding layer since one would be motivated to minimize light reflected by the wirings in such a way that an aperture ratio is not negatively influenced (col. 5, lines 42-50). Furthermore, since side crosstalk is generated by the leakage of light irradiated at an angle in the area on the data line, forming a first light shielding

layer having a greater width would block light to reduce lateral crosstalk (col. 6, lines 20-27).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Okada and further in view of Song.

As to claim 7, AAPA, when modified by Okada, discloses the LCD device as recited above.

However, the reference fails to specifically disclose a repair line situated across the first shielding layer and the second shielding layer, where the repair line partially overlaps the first shielding layer to provide a first repair point and the repair line partially overlaps the second shielding layer to provide a second repair point.

Song discloses an LCD having a repair line situated across the first shielding layer and the second shielding layer, where the repair line partially overlaps the first shielding layer to provide a first repair point and the repair line partially overlaps the second shielding layer to provide a second repair point (col. 6, lines 41-67; fig. 1, ref. A,B,C, D).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a repair line situated across the first shielding layer and the second shielding layer, where the repair line partially overlaps the first shielding layer to provide a first repair point and the repair line partially overlaps the second shielding

layer to provide a second repair point since one would be motivated to provide the most effective means of gate and data line repair (col. 6, lines 60-65; col. 1, lines 40-44).

Response to Arguments

Applicant's arguments filed on 19 April 2007 have been fully considered but they are not persuasive.

Applicant's ONLY substantive arguments are as follows:

- (1) Regarding base claim 1, the first shielding layer does overlap the adjacent source electrode.
- (2) Regarding claim 31, it is enabled.
- (3) Dependent claims are allowable because they directly or indirectly depend from an allowable base claim.

Examiner's responses to Applicant's ONLY arguments are as follows:

- (1) It is respectfully pointed out that newly added limitations as to "... overlaps across the source electrode of the thin film transistor of the adjacent pixel area." is considered misleading. Please reference Applicant's Figure 3E of the elected invention. 42A overlaps the extension portion of data line 34a that runs from 34a to the source of the TFT, 38b, at S. This is considered to be NOT the adjacent pixel area to the left of 34a at 42B and NOT above 32b.

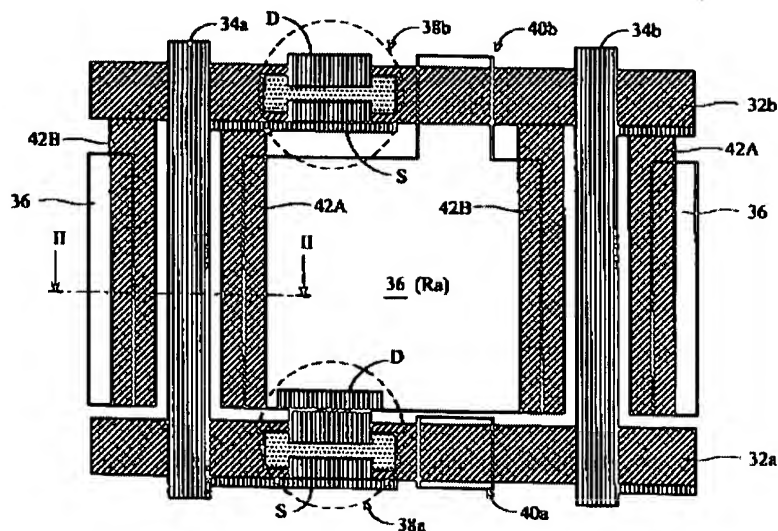


FIG. 3E

Also, the first shielding layer does not overlap any source electrode.

For examination purposes, "of the adjacent pixel area" will be considered to limit to - - any area adjacent the central portion of the pixel area - -. In other words, the peripheral area surrounded by 34a, 34b, 32a, and 32b.

Also, for examination purposes the shielding layer will be considered to overlap the extension portion connecting 34a to the source electrode at S, per Applicant's elected species, Figure 3E.

Examiner understands what Applicant apparently wants to claim regarding 38b driving an adjacent sub-pixel, but the present claim limitations are still way too broad and misleading.

(2) It is respectfully pointed out that claim 31 is considered enabled, objected to, examined, and rejected above.

(3) It is respectfully pointed out that in so far as Applicant has not argued rejection(s) of the limitations of dependent claim(s), Applicant has acquiesced said rejection(s).

Any references cited but not applied are relevant to the instant Application.

Conclusion

Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy L. Rude whose telephone number is (571) 272-2301. The examiner can normally be reached on Mon-Thurs.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



tlr

Timothy L Rude
Examiner
Art Unit 2871



David Nelms
Supervisory Patent Examiner
Technology Center 2800